

Figure F1. Map of Expedition 398 drill sites in the Hellenic Volcanic Arc. Sites U1589 and U1591 where sections from this study were drilled are marked with red stars. Map modified from Druitt et al. (2024b).

Figure F2. VSWIR results comparing visible tephra unit and background sediment in Section 398-U1589A-44F-2A. Key absorption features are indicated with gray vertical lines. The features at 0.94, 2.2, and 2.35 μm are used to distinguish tephra from nonvolcanic sediment.

Figure F3. Nondimensional spectral summary parameters BDI1000VIS, BD2p2, and BD2p35 and onboard SHMSL MS plotted for comparison with core photograph taken shipboard, Section 398-U1589A-44F-2A. High BDI1000VIS and MS and low BD2p35 and BD2p2 correlate with the presence of tephra. Patterned intervals highlight tephra and potential tephra units, both visible and invisible. The dark material visible in the top of the photograph is a visible tephra unit, clearly distinct from the light-colored marine sediment above and below it. The three other highlighted units are potential cryptotephra, only identified using VSWIR results.